1st sit Coursework Question Paper **Spring Semester 2024**

Module Code:	**CS5054NI**
Module Title:	**Advanced Programming and Technologies**
Module Leader:	**Mr. Prithivi Maharjan (Islington College)**

Coursework Type:	**Group Work**
Coursework Weight:	This coursework accounts for **50%** of your total module grades.
Submission Date:	**Friday, 10 May 2024, before 01:00 PM**
When Coursework is given out:	**Week 6**
Submission Instructions:	Submit the following to Islington College's MST portal before the due date: ● **Report should be in .pdf** ● **Eclipse project folder should be zipped** ● **Database design schema**
Warning:	London Metropolitan University and Islington College take Plagiarism seriously. Offenders will be dealt with sternly.

Plagiarism Notice

You are reminded that there exist regulations concerning plagiarism.

Extracts from University Regulations on Cheating, Plagiarism and Collusion

Section 2.3: “The following broad types of offence can be identified and are provided as indicative examples …...

(i) Cheating: including copying coursework.

(ii) Falsifying data in experimental results.

(iii) Personation, where a substitute takes an examination or test on behalf of the candidate. Both candidate and substitute may be guilty of an offence under these Regulations.

(iv) Bribery or attempted bribery of a person thought to have some influence on the candidate’s assessment.

(v) Collusion to present joint work as the work solely of one individual.

(vi) Plagiarism, where the work or ideas of another are presented as the candidate’s own.

(vii) Other conduct calculated to secure an advantage on assessment.

(viii) Assisting in any of the above.

Some notes on what this means for students:

1. Copying another student's work is an offence, whether from a copy on paper or from a computer file, and in whatever form the intellectual property being copied takes, including text, mathematical notation and computer programs.

2. Taking extracts from published sources without attribution is an offence. To quote ideas, sometimes using extracts, is generally to be encouraged. Quoting ideas is achieved by stating an author's argument and attributing it, perhaps by quoting, immediately in the text, his or her name and year of publication, e.g., " e = mc2 (Einstein 1905)". A reference section at the end of your work should then list all such references in alphabetical order of authors' surnames. (There are variations on this referencing system which your tutors may prefer you to use.) If you wish to quote a paragraph or so from published work then indent the quotation on both left and right margins, using an italic font where practicable, and introduce the quotation with an attribution.

Further information in relation to the existing London Metropolitan University regulations concerning plagiarism can be obtained from http://www.londonmet.ac.uk/academic-regulations

Deliverables

You are required to submit two components before the submission deadline.

1. The first component is the software project, which must contain all of the Java source code. You can zip the project to submit it. This component should demonstrate your understanding of the coursework material and your ability to implement a Java project.
2. The second component is a report in PDF format. The report should describe the software project, your approach to the project, and the challenges you faced. The report should also discuss your learnings from the project.

Project Information

This group coursework is about developing an **e-commerce** website for **electronics and gadgets**. The website should follow the **MVC** pattern, which means that it should be divided into three packages: model, view, and controller. Here are some additional details about the MVC pattern:

- Project should follow the MVC pattern.
- There must be three packages within this project – model, view, and controller.
- Controller folder should contain Servlets which accept all the request of user and perform operations accordingly.
- Model folder contains all the model classes that are required for your project.
- View folder contains the JSP, HTML, and CSS file.

Task 1: [20 marks]

Login Feature [10 marks]

The login functionality should be integrated with a database, allowing for session management and appropriate redirection based on the user's role during the login process.

- Users and administrators are required to log in using their respective accounts. In the condition that an account does not exist, a clear message will be displayed, providing instructions for creating a new account.

- In case the provided username and password do not match, an appropriate message should be displayed to the user, indicating the mismatch.

- The login redirection and authentication mechanisms should be precisely implemented to ensure their proper functioning.

- Upon successful login, a session with a duration of 30 minutes of inactivity time should be initiated, incorporating proper expiry time management. Additionally, the user's information will be securely stored in cookies for seamless access and identification.

Note: Please ensure that the login feature incorporates the mentioned specifications, along with appropriate validation procedures and corresponding error messages.

Admin Panel Feature [10 marks]

1. User Authentication [2 marks]

- Only users with admin privileges can access the login functionality for the admin features.
- When admin logouts from the system, session and cookies should be also cleared.
- When an admin is logged in, only views specifically designed for administrators should be displayed.

2. Product Management [6 marks]

- The system should provide the admin with a comprehensive list of all product information, including product images.
- The admin should be able to add a new product, requiring essential information. Image and other basic information should be mandatory.
- The admin should have the capability to delete existing products.
- The admin should be able to update relevant information for existing products.

3. Order List [2 marks]

- The admin should have access to a complete list of client orders, specifically highlighting the order status, whether pending or delivered.

Task 2 [25 marks]

1. User Profile Page [5 marks]

- User should be able to view their profile information.
- User should be updating their required profile information
- When user is not logged in this page should be hidden.

2. About Us Page [3 marks]

- User should be able to contact via phone number/s.
- User should be able to contact via email and message description.

3. Home Page [17 marks]

- Only user can login to this feature.
- There should be search feature from where user can search product according to the product price and name.
- User can view the list of products with the product information like image, price, stock, add to cart option and other desired information.
- Can be accessed even when user is not logged in.

3.1. When user is not logged in [7 marks]

- There should be login button from where user can go the login page
- When user navigates to view cart list page, proper message should be shown denoting login is required to add the product.
- When the add to cart option is click proper message should be shown denoting login is required to add the product.

3.2. When user is logged in [10 marks]

- User can logout from the system (when the user is logged out all the session should be expired)
- User should be able to view the list of all products.
- User should be able to add product to their cart
- User should be able to view their cart items
- User should be able to remove specific cart items

- User should be able to order all the items from cart list.
- User should be only able to view their history of ordered items.

Task 3 [5 marks]

1. **Validation and Exception Handling [2.5 marks]**
2. **Programming Styles [2.5 marks]**

Task 4 [40 marks]

A reflective report (1500 words), which concisely documents:

1. The report should adhere to a well-organized structure, encompassing essential elements such as appropriate font size, font family, alignment, introduction, conclusion, reference and other necessary components.
2. A comprehensive explanation is expected regarding the tools, techniques, and libraries employed for programming, designing, and reporting purposes. Each tool should be described, along with its utilization and the benefits it offers, accompanied by relevant visuals.
3. The wireframe and actual design must be presented with substantiating evidence, showcasing their development process.
4. Inclusion of a class diagram and an elaborate description of the classes' purpose, properties, and methods is essential.
5. The report should feature a series of test cases, supported by suitable evidence in the form of system screenshots. A minimum of five test cases is required.
6. It is expected that the report contains a reflective section detailing the developer's experience during the task's execution. This should encompass any encountered issues, their respective solutions, and the lessons learned throughout the development process.

Report Structure

1. Introduction [3 marks]

1.1. Aim

1.2. Objectives

2. User Interface Design [5 marks]

2.1. Wireframe [2 marks]

2.2. Actual design [3 marks]

3. Class diagram [5 marks]

3.1. Overall, Class Diagram [2 marks]

3.2. Individual Class Diagram [3 marks]

4. Method description [5 marks]

5. Test cases [5 marks]

6. Tools and libraries used [5 marks]

7. Development Process [5 marks]

(Should portray the entire journey of system development with evidence)

8. Critical Analysis [5 marks]

(Should include the challenges and problem faced with evidence)

9. Conclusion [2 marks]

10. Reference

Task 5 [10 marks]

Viva – Oral Presentation

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